

Figure 1

scFv m6 fragment (SEQ ID NO:1)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGKLEIKRTGGGGS
GGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGVNWVRQAPGH
GLEWMGGIPIFGTSNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGTLTVSS

scFv m9 fragment (SEQ ID NO:2)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGKLEIKRTGGGGS
GGGGSGGGGSVQLLEQSGAEVKKPGSSVQVSCKAFGGTFSMYGFNWVRQAPGH
GLEWMGGIPIFGTTNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEGGDSYDGSGRGFFDFWGQGTLVNSS

Flexible linker 1 (of m6Fc1, m9Fc1 m12Fc1, m14Fc1, m16Fc1, m18Fc1) (SEQ ID NO:3)

PDPEEPKSCDKTHTCPPCP

Flexible linker 2 (of m6Fc2 and m9Fc2) (SEQ ID NO:4)

EPKSCDKTHTCPPCAPPDPEEPKSCDKTHTCPPCP

IgG1 Fc region (CH2-CH3) (SEQ ID NO:5)

APELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVH
NAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKA
KGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTT
PPVLDSDGSFFLYSKLTVDKSRWQQGNVFSCVMHEALHNHYTQKSLSLSPG

m6Fc1 Amino Acid Sequence (SEQ ID NO:6)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGKLEIKRTGGGGS
GGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGVNWVRQAPGH
GLEWMGGIPIFGTSNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGTLTVSSPDPEEPKSCDKTHTCPPCPAPE
LLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAK
TKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQP
REPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVVL
DSDGSFFLYSKLTVDKSRWQQGNVFSCVMHEALHNHYTQKSLSLSPG

m6Fc2 Amino Acid Sequence (SEQ ID NO:7)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFGQGKLEIKRTGGGGS
GGGASGGGGSVRLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGVNWVRQAPGH
GLEWMGGIPIFGTSNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEDGDSYDGSGRGFFDFWGQGTLTVSSEPKSCDKTHTCPPCAPPDPEEPK
SCDKTHTCPPCPAPEELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF

NWYVDGVEVHNAKTPREEQYNSTYRVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTIKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESN
GQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGVFSCSVMHEALHNHYTQ
KSLSLSPG

m9Fc1 Amino Acid Sequence (SEQ ID NO:8)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFQGQGTKLEIKRTGGGGS
GGGGSGGGGSVQLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGFNWVRQAPGH
GLEWMGGIPIFGTTNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEGGDSYDGSGRGFFDFWGQGTLNVNSSEPKSCDKHTCPCPAPE
LLGGPSVFLFPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWyVDGVEVHNAK
TKPREEQYNSTYRVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTIKAKGQP
REPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVVL
DSDGSFFLYSKLTVDKSRWQQGVFSCSVMHEALHNHYTQKSLSLSPG

m9Fc2 Amino Acid Sequence (SEQ ID NO:9)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFQGQGTKLEIKRTGGGGS
GGGGSGGGGSVQLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGFNWVRQAPGH
GLEWMGGIPIFGTTNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEGGDSYDGSGRGFFDFWGQGTLNVNSSEPKSCDKHTCPCPAPE
SCDKHTCPCPAPELLGGPSVFLFPKPKDTLMISRTPEVTCVVVDVSHEDPEVKF
NWYVDGVEVHNAKTPREEQYNSTYRVSVLTVLHQDWLNGKEYKCKVSNKA
LPAPIEKTIKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESN
GQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGVFSCSVMHEALHNHYTQ
KSLSLSPG

scFv X5 fragment (SEQ ID NO:10)

VLTQSPGTLSLSAGERATLSCRASQSVSSGSLAWYQQKPGQAPRLLIYGASTRATG
IPDRFSGSGSGTDFTLTIGRLEPEDLAVYYCQQYGTSPYTFQGQGTKLEIKRTGGGGS
GGGGSGGGGSVQLLEQSGAEVKKPGSSVQVSCKASGGTFSMYGFNWVRQAPGH
GLEWMGGIPIFGTSNYAQKFRGRVTFTADQATSTAYMELTNRSDDTAVYYCAR
DFGPDWEGGDSYDGSGRGFFDFWGQGTLTVSS

scFv m12 fragment (SEQ ID NO:11)

TLTQSPTTLSASPGERVILSCRASQSVSSHLAWYQQRPGQTPRLLIYSSSSRAAGIP
DRFSGSGSGTDFTLTISRLEPEDFAVYYCQNQGSPRFFFPGPTVDMKRGGGGSG
GGGGGGGSVQLLESQGPLVKPSQLSLTCAISGDSLSSDSTAWNWIRQSPSRGLE
WLGRTYYRSTWFYDYAESVKSRIINNPDTSKSQFLQLRSVTPEDTAVYYCARDF
NKGAGYNWFDPWGPGBTVVTVSS

scFv m14 fragment (SEQ ID NO:12)

ELTQSPGTLSLSPGERATLSCRASHSVSRAYLAWYQQKPGQAPRLLIYGTSRRATG
IPDRFSGSGSGTDFTLTISRLEPEDFAVYYCQQYGGSPWFGQGQGTKVELKRGGGGSG
GGGGGGGSVQLLESQGPLVKPSQLSLTCTVSGGSIISTGDYYWSWIRQSPGKGL
EWIGYISSSGNTYYNPSLTSRVVISFDTSMNQFSLKVDSVTAADTAVYYCARERRV
LLWLGFPRGGLDYWGQGTLTVSS

scFv m16 fragment (SEQ ID NO:13)

MTQSPSSVSASVGDRVTITCRASQGSSWLA WYQQKPGKAPKLLINAASSLQSGV
PSRFSGSGSGTDFTLTISSLQPEDFATYYCQQANSFPLTFGGGTKVEIKRGGGGS
GGSGGGGSVQLLESGAEVKRPGVSVSCQVSGGSFSNYAVSWVRQTPGHGLEW
MGGIIPMFNAPNYAQKFHGRVTIADESTRTVHMELRSLRSEDTAVYFCATASEA
TENDYYQSPTHYYAMDVGWQGTAVTVFSS

scFv m18 fragment (SEQ ID NO:14)

QMTQSPSFLSASVGDRVSITCRASQDIQKFLAWYQLTPGDAPKLLMYSASTLQSG
VPSRFSGSGSGTEFTLTISGLQPEDFATYYCQHLKRYPYTFGQGTKLEISRGGGGSG
GGGSGGGGSVQLLESGPGVVKPSETSLTCTVSGASVNNYYWTWVRQPPGKGLE
WIGNVYDSDGTNYPNSLSSRLSLSMDTSKNQFSLRLSSVTAADTATYYCARYHRH
FIRGPLSFYWGRTLVTVSS

m12Fc1 Amino Acid Sequence (SEQ ID NO:15)

TLTQSPTTLSASPGERVILSCRASQSVSSHLAWYQQRPGQTPRLLIYSSSSRAAGIP
DRFSGSGSGTDFTLTISRLPEDFAVYYCQNQGFSPRFFGPGTTVDMKRGGGGSG
GGGSGGGGSVQLLESGPGVLVKPSQSLSLTCAISGDSLSSDSTAWNWIRQSPSRGLE
WLGRTYYRSTWFYDYAESVKSRIINPDTSKSQFSLQLRSVTPEDTAVYYCARDF
NKGAGYNWFDPWGPGBTVVTVSSPDPEEPKSCDKHTCPPCPAPEELLGGPSVFLFP
PKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNATKPREEQYNS
TYRVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPVYTLPP
SRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSK
LTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m14Fc1 Amino Acid Sequence (SEQ ID NO:16)

ELTQSPGTLSLSPGERATLSCRASHSVRAYLAWYQQKPGQAPRLLIYGTSSRATG
IPDRFSGSGSGTDFTLTISRLPEDFAVYYCQQYGGSPWFGQGTKVELKRGGGGSG
GGGSGGGGSVQLLESGPGVLVKPSQTLSLTCTVSGGSISTGDYYWSWIRQSPGKGL
EWIGYISSSGNTYYNPSLTSRVVISFDTSMNQFSLKVDSVTAADTAVYYCARERRV
LLWLGFPREGGLDYWGQTLTVSSPDPEEPKSCDKHTCPPCPAPEELLGGPSVFLF
PPPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNATKPREEQYN
STYRVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREPVYTLPP
PSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYS
KLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

m16Fc1 Amino Acid Sequence (SEQ ID NO:17)

MTQSPSSVSASVGDRVTITCRASQGSSWLA WYQQKPGKAPKLLINAASSLQSGV
PSRFSGSGSGTDFTLTISSLQPEDFATYYCQQANSFPLTFGGGTKVEIKRGGGGS
GGSGGGGSVQLLESGAEVKRPGVSVSCQVSGGSFSNYAVSWVRQTPGHGLEW
MGGIIPMFNAPNYAQKFHGRVTIADESTRTVHMELRSLRSEDTAVYFCATASEA
TENDYYQSPTHYYAMDVGWQGTAVTVFSSPDPEEPKSCDKHTCPPCPAPEELLG
GPSVFLPPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNATK
PREEQYNSTYRVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAKGQPREP
QVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSD
GSFFLYSKLTVDKSRWQQGNVFSCSVMHEALHNHYTQKSLSLSPG

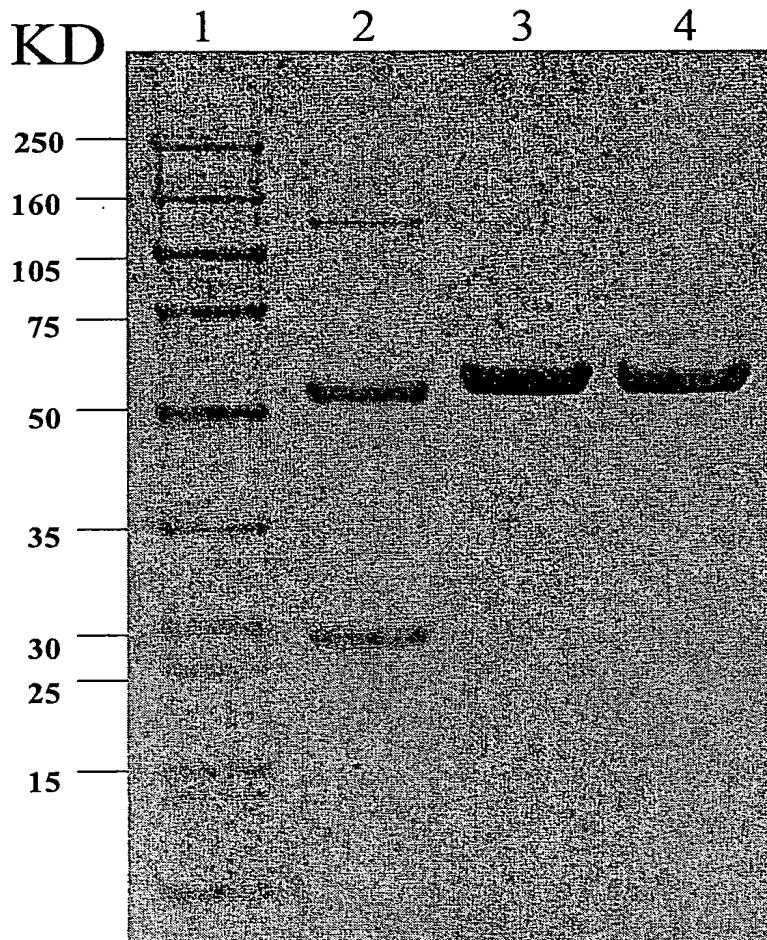
m18Fc1 Amino Acid Sequence (SEQ ID NO:18)

QMTQSPSFLSASVGDRVSITCRASQDIQKFLAWYQLTPGDAPKLLMYSASTLQSG
VPSRFSGSGSGTEFTLTISGLQPEDFATYYCQHLKRYPYTFGQGTKLEISRGGGGSG
GGGSGGGGSVQLLESQPGVVKPSETLSLTCTVSGASVNYYWTWVRQPPGKGLE
WIGNVYDSDGTNYNPSLSSRLSLSMDTSKNQFSRLSSVTAADTATYYCARYHRH
FIRGPLSFDYWGRGTLTVSSPDPEEPKSCDKHTCPGPCAPELLGGPSVFLFPKPK
KDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYR
VVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTIISKAKGQPREPVYTLPPSRD
ELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTV
DKSRWQQGVFSCSVMHEALHNHYTQKSLSLSPG

Optional Leader Sequence (SEQ ID NO:19)

MPMGSLQPLATLYLLGMLVASVLA

Figure 2



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